

We claim as our invention:

1. A set of computers comprising:

at least two computers, each computer comprising at least one heat-generating component, each computer adapted to permit air to flow in the computer such that airflow goes through, over, or adjacent to the at least one heat-generating component to cool the at least one heat-generating component; and

a rack configured for the at least two computers to be placed in a back-to-back configuration such that the rack and computers will cooperate to direct air that flows through the computers (1) up to exit the rack through an upper section of the rack, (2) down to exit the rack through a lower section of the rack, or (3) both.

2. The set of claim 1 wherein each computer further comprises a chassis comprising a front panel.

3. The set of claim 1 wherein each computer further comprises a chassis comprising enclosing at least one main board.

4. The set of claim 1 wherein the computers and the at least one rack cooperate to define a space between at least two back-to-back computers.

5. The set of claim 3 wherein the computers and the at least one rack cooperate to define a space between at least two back-to-back computers.

6. The set of claim 3 wherein the computers are configured with at least one vent.

7. The set of claim 6 wherein the at least one vent is provided at a back section of at least one of the computers.

8. The set of claim 6 wherein the at least one vent is provided at a front section of at least one of the computers.

9. A set of computers comprising:

at least two computers, each computer comprising at least one heat-generating component, each computer adapted to permit air to flow through, over, or adjacent to the at least one heat-generating component to cool the at least one heat-generating component; and

a rack configured for the at least two computers to be placed in a back-to-back configuration such that the rack and computers will cooperate to direct air such that the air (1) flows up to enter the rack through a lower section of the rack, (2) flows down to enter the rack through an upper section of the rack, or (3) both, and exits through the computers.

10. The set of claim 9 wherein each computer further comprises a chassis comprising a front panel.

11. The set of claim 9 wherein each computer further comprises a chassis enclosing at least one main board.

12. The set of claim 9 wherein the computers and the rack cooperate to define a space between at least two back-to-back computers.
13. The set of claim 11 wherein the computers and the rack cooperate to define a space between at least two back-to-back computers.
14. The set of claim 11 wherein the computers are configured with at least one vent.
15. The set of claim 14 wherein the at least one vent is provided at a back section of at least one of the computers.
16. The set of claim 14 wherein the at least one vent is provided at a front section of at least one of the computers.
17. A set of computers comprising:
 - a rack; and
 - at least two computers, each computer comprising at least one heat-generating component, each computer adapted to permit air to flow through, over, or adjacent to the at least one heat-generating component to cool the at least one heat-generating component;
 - wherein the computers are positioned in the rack in a back-to-back configuration such that the rack and computers cooperate to direct air that flows

through the computers (1) up to exit the rack through an upper section of the rack, (2) down to exit the rack through a lower section of the rack, or (3) both.

18. The set of claim 17 wherein each computer further comprises a chassis comprising a front panel.

19. The set of claim 17 wherein each computer further comprises a chassis enclosing at least one main board.

20. The set of claim 17 wherein the computers and the rack cooperate to define a space between at least two back-to-back computers.

21. The set of claim 19 wherein the computers and the rack cooperate to define a space between at least two back-to-back computers.

22. The set of claim 19 wherein the computers are configured with at least one vent.

23. The set of claim 22 wherein the at least one vent is provided at a back section of at least one of the computers.

24. The set of claim 22 wherein the at least one vent is provided at a front section of at least one of the computers.

25. A set of computers comprising:

a rack; and

at least two computers, each computer comprising at least one heat-generating component, each computer adapted to permit air to flow through, over, or adjacent to the at least one heat-generating component to cool the at least one heat-generating component;

wherein the computers are positioned in the rack in a back-to-back configuration such that the rack and computers cooperate to direct air (1) up to enter the rack through a lower section of the rack, (2) down to enter the rack through an upper section of the rack, or (3) both, and exits through the computers.

26. The set of claim 25 wherein each computer further comprises a chassis comprising a front panel.

27. The set of claim 25 wherein each computer further comprises a chassis enclosing at least one main board.

28. The set of claim 25 wherein the computers and the rack cooperate to define a space between at least two back-to-back computers.

29. The set of claim 27 wherein the computers and the rack cooperate to define a space between at least two back-to-back computers.

30. The set of claim 27 wherein the computers are configured with at least one vent.

31. The set of claim 30 wherein the at least one vent is provided at a back section of at least one of the computers.

32. The set of claim 30 wherein the at least one vent is provided at a front section of at least one of the computers.

33. A method of cooling one or more heat-generating components in two or more computers, where such computers are mounted back-to-back in a rack, the method comprising:

directing air into and through each of the computers to cool at least one heat-generating component; and

directing the air (1) up to exit the rack through an upper section of the rack, (2) down to exit the rack through a lower section of the rack, or (3) both.

34. The method of claim 33 further comprising the step of providing the back-to-back computers to form in cooperation with the rack a space between the back-to-back computers.

35. The method of claim 34 further comprising the step of providing fans in the computers, the fans adapted to draw air from the computers into the space between the computers.

36. The method of claim 35 further comprising the step of providing fans in the computers, the fans adapted to pass air through, over, or adjacent to the at least one heat-generating component and into the space between the computers.

37. The method of claim 34 wherein the step of directing air into and through each of the computers comprises providing forced air to the computers.

38. The method of claim 34 wherein the step of directing air into and through each of the computers comprises providing air conditioned air to the computers.

39. The method of claim 34 wherein the step of directing air into and through each of the computers comprises drawing air to cool the at least one heat-generating component in from the environment and exhausting the air out the rack.

40. The method of claim 33, wherein the one or more heat-generating components are provided on one or more main boards of the computers, where each of the computers has a front section and a back section.

41. The method of claim 33, wherein the one or more heat-generating components comprise power supplies.

42. A method of cooling one or more heat-generating components in two or more computers, where such computers are mounted back-to-back in a rack, the method comprising:

directing air to cool the one or more heat-generating components (1) up to enter the rack through a lower section of the rack, (2) down to enter the rack through an upper section of the rack, or (3) both; and

directing the air through the computers such that the air flows through, over, or adjacent to the at least one heat-generating component.

43. The method of claim 42 further comprising the step of providing the back-to-back computers to form in cooperation with the rack a space between the back-to-back computers.

44. The method of claim 43 further comprising the step of providing fans in the computers, the fans adapted to draw air from the space between the computers to cool the at least one heat-generating component.

45. The method of claim 44 further comprising the step of providing fans in the computers, the fans adapted to pass air from the space between the computers and through, over, or adjacent to the at least one heat-generating component.

46. The method of claim 43 wherein the step of directing air to cool the one or more heat-generating components comprises providing forced air to the space.

47. The method of claim 43 wherein the step of directing air to cool the one or more heat-generating components comprises providing air conditioned air to the space.

48. The method of claim 43 wherein the step of directing air to cool the one or more heat-generating components comprises drawing air to cool the at least one heat-generating component in from the environment and exhausting the air out the rack.

49. The method of claim 42, wherein the one or more heat-generating components are provided on one or more main boards of the computers, where each of the computers has a front section and a back section.

50. The method of claim 42, wherein the one or more heat-generating components comprise power supplies.

51. A set of computers, comprising:

at least two computers, each computer comprising at least one heat-generating component, each computer adapted to permit air to flow through the computer such that airflow goes through, over, or adjacent to the at least one heat-generating component to cool the at least one heat-generating component;

a rack configured for the at least two computers to be placed in a back-to-back configuration such that air to cool the at least one heat-generating component flows through the back-to-back computers and the rack.